System 5 Pre-Flight Test Data
Mission Number 4019
21 December 1956

1. Recorder Bench Check (9 Recorders)

a. Tape handling surface cleaned ✓ b. Heads cleaned ✓
c. Loop arm commutator cleaned ✓ d. Heads demagnetized ✓
e. Hours of tape loaded 8½ f. Desiccant check ✓
g. Mechanical operation check ✓
h. Electrical operation check
Track 1 1 kc ✓ Track 2 ✓ Track 3 ✓
23 kc ✓

2. System Pre-Flight Check:

Band I - Frequency 75 mc/s

Left	Right
Power into trip pulse stretcher-50 dbm.	Power into trip pulse stretcher -57 dbm.
Power into saturate amp -20 dbm.	Power into saturate amp -21 dbm.

Band II - Frequency 84 mc/s

Left	Right
Power into trip pulse stretcher -49 dbm.	Power into trip pulse stretcher -50 dbm.
Power into saturate amp -19 dbm.	Power into saturate amp -21 dbm.

Band III - Frequency 220 mc/s through filters
Power into trip pulse stretcher -40 dbm.
Power into saturate amplifier -26 dbm.

Band IV - Frequency 400 mc/s fed through filter

Left	Right
Power into trip pulse -41 dbm.	Power into trip pulse stretcher -42 dbm.
Power into saturate amp -25 dbm.	Power into saturate amp -24 dbm.

Band V - Frequency 400 mc/s into detector

Left	Right
Power into trip pulse stretcher -34 dbm	Power into trip pulse stretcher -35 dbm
Power into saturate amp -21 dbm	Power into saturate amp -20 dbm.

Band VI - Frequency 4000 mc/s Fed Through Crystal

Left	Right
Power into trip pulse stretcher -39 dbm	Power into trip pulse stretcher -36 dbm
Power into saturate amp -21 dbm	Power into saturate amp -20 dbm

Band VII - Frequency 4000 mc/s - Fed Through Filter

Left	Right
Power into trip pulse stretcher -34 dbm	Power into trip pulse stretcher -33 dbm
Power into saturate amp -17dbm	Power into saturate amp -19 dbm

Band VIII - Frequency 5000 mc/s - Fed Through Filter

Left	Right
Power into trip pulse stretcher -44 dbm	Power into trip pulse stretcher -41 dbm
Power into saturate amp -29 dbm	Power into saturate amp -27 dbm

Band IX - Frequency 7500 mc/s - Fed Through Filter

Left	Right
Power into trip pulse stretcher -36 dbm	Power into trip pulse stretcher -34 dbm
Power into saturate amp -20 dbm	Power into saturate amp -18 dbm

3. A Hewlett Packard Model A16B signal generator with a standard length of cable was used for checking out bands VI through IX. A PRF of 1000 PPS and a 1 u sec pulse width was used.

4. A Hewlett Packard Model 608D signal generator modulated by a Hewlett Packard pulse generator Model 212A with attenuation dial set at 0 db and the amplitude dial set at 50 pulse width 1 u sec PRF 1000 PPS for bands III through V.

5. Bands I and II used the same set-up as was used in bands III through V with the exception of the pulse width which was set at 10 u sec.

SYSTEM 1 PRE-FLIGHT TEST DATA

MISSION NUMBER 4019 Band X 21 December 1956

1. RECORDER BENCH CHECK:

a. Tape Handling Surfaces Cleaned:____ b. Heads Cleaned:_____
c. Loop Arm Commutator Cleaned:_____ d. Heads Demagnetized:___
e. Hours of Tape Loaded:_____ f. Desiccant Check:_____
g. Mechanical Operation Check:_____
h. Electrical Operation Check:

	Track 1	Track 2	Track 3
1 kc	___	___	___
1.3 kc	___		
1.7 kc	___		
2.3 kc	___		
3 kc	___		

2. SYSTEM PRE-FLIGHT CHECK:

a. Antennas Installed: Left____ Right____ Polarization 45°CCW

b. Pre-amplifiers Installed: Yes - Rambo - TW Gear

Left Preamp: (not filled in)

Right Preamp: (not filled in)

Test set output adjusted to 20 milliwatts through 10 db gain horn at 30 feet from driven element.

Into Amp Output: Left 4 Volts Channel 3 Right 6 Volts Channel 2

3. Power On: Information Amplifier Gain at 1000 PPS.

Left Amp Gain 3: Pulse Width 150: Right Amp Gain 3.0: Pulse Width 150

Left side indexed with 1500 PPS for approximately 1 minute.
Right side indexed with 1000 PPS for approximately 1 minute.

4. CLEARANCE: All Equipment Installed and Ready for Mission:
Date-21/12/56: Time 2300 Signed s/UVJ/AJA

5. Tape Result Data:
Masterswitch on 0603
Masterswitch off 150
Flame outs - None
Total Tape Time - 9 hours, 5 minutes.

System 3 was checked out before the 22 December mission. At that time, the signal required for a lock-on measured 3-20 UV throughout the 100-150.4 mc/s range. The average value required was about 3 UV.

During the flight, about one-two hours after takeoff, receiver 1 (Bands 1, 7 and 9) failed, probably due to temperature rise, a condition not encountered during the bench tests. Receivers 2 and 3 however, continued sweeping as evidenced by marker pulses on the tape.

System 3 was checked out after the mission and was found to perform in the same way as it did before the mission.

The relative dearth of signals on tracks 2 and 3, therefore, was probably due to a lack of activity.